

What is claimed is:

1. A surface material adapted to provide an in-mold surface coating for use with a molding material, the surface material comprising:

a layer of a surface resin material; and

5 a resin conducting layer, said resin conducting layer comprising a venting structure for venting gases during processing of said surface material, said resin conducting layer further providing a resin retention structure for retaining said surface resin material in contact with the mold surface during processing of said surface material, wherein the resin conducting layer comprises a woven or non-woven thermo-
10 plastic fabric material.

2. A surface material according to Claim 1 wherein the thermoplastic fabric material has a weight of between 20 g/m² up to 100 g/m².

15 3. A preform surface material adapted to provide an in-mold surface coating for use with multiple layers of a preform molding material, said perform molding material comprising a reinforcement resin material, the surface material comprising:

a layer of a surface resin material and a resin conducting layer, said resin
20 conducting layer comprising a venting structure for venting gases during processing of said surface material, said resin conducting layer further providing a resin retention structure for retaining said surface resin material in contact with the mold surface during processing of said surface material; and

wherein, during processing of the surface material, the minimum viscosity of
25 the surface resin material is higher than the minimum viscosity of the reinforcement resin material to retain the surface resin material on the mold surface.

4. A surface material according to Claim 3 wherein the resin retention structure has a fine weave or the like structure to reduce the tendency for the formation of surface irregularities.

5 5 A surface material according to Claim 3 wherein the resin conducting layer is adapted to move through the surface resin material during processing of the surface material to provide a gas venting route in a direction approximately perpendicular to the mold surface.

10 6. A surface material according to Claim 3 wherein the thickness of the resin conducting layer is larger than the thickness of the surface resin layer.

7. A surface material according to Claim 3 wherein the material further comprises a further resin conducting layer, the further resin conducting layer
15 comprising a venting structure for venting gases during processing of the material.

8. A surface material according to Claim 7 wherein the further resin conducting layer is adapted to move through the surface resin layer during processing of the surface material.

20 9. A surface material according to Claim 3 wherein the reinforcement resin material comprises higher glass transition temperature properties than the glass transition temperature properties of the surface resin material.

25 10. A surface material according to Claim 3 wherein the surface resin material and the reinforcement resin material comprise such thermal expansion properties that thermal stresses are dissipated in the surface material.

11. A surface material according to Claim 3 wherein the surface resin material comprises a gel coat resin material.

12. A surface material according to Claim 3 wherein the surface resin material is non-homogeneous so as to adapt the properties of the surface material to the properties of the molding material to avoid interfacial stresses between the molding material and the surface material.

13. A surface material according to Claim 3 wherein the resin conducting layer comprises a woven or non-woven thermo-plastic fabric material.

14. A surface material according to Claim 3 wherein the surface material comprises a surface reinforcement layer.

15. A surface material according to Claim 14 wherein the surface reinforcement layer comprises a woven and/or non-woven fibrous surface reinforcement material.

16. A laminate structure comprising:
one or more layers of a molding material; and
one or more layers of a surface material including a layer of a surface resin material, and a resin conducting layer, said resin conducting layer comprising a venting structure for venting gases during processing of said surface material, said resin conducting layer further providing a resin retention structure for retaining said surface resin material in contact with the mold surface during processing of said surface material, wherein the resin conducting layer comprises a woven or non-woven thermo-plastic fabric material.

17. A method of forming a molded article comprising:

providing a surface material including a layer of a surface resin material, and a resin conducting layer, said resin conducting layer comprising a venting structure for venting gases during processing of said surface material, said resin conducting layer further providing a resin retention structure for retaining said surface resin material in contact with the mold surface during processing of said surface material, wherein the resin conducting layer comprises a woven or non-woven thermo-plastic fabric material;

providing the surface material in relation to a mold surface;

providing one or more layers of a molding material in relation to said surface material to form a laminate structure; and

processing said laminate structure to form said molded article.

18. A method according to Claim 17 wherein the molded article is processed in two stages wherein, in the first stage, the surface resin impregnates the resin retention structure and, in the second stage, the laminate structure is processed to cure.

19. A method according to Claim 18 wherein the first and the second processing stages are conducted simultaneously.

20. A method of manufacturing a surface material comprising the steps of: providing a layer of a resin conducting material, said resin conducting layer comprising a venting structure for venting gases during processing of said surface material, said resin conducting layer further comprising a resin retention structure for retaining said resin material into contact with the mold surface during processing of said surface material;

providing a layer of a surface resin material; and

locating said layer of a surface resin material in relation to said resin conducting layer.

21. A preform surface material adapted to provide an in-mold surface coating comprising:

a layer of a surface resin material; and

a resin conducting layer, said resin conducting layer comprising a venting structure for venting gases during processing of said surface material, wherein said resin conducting layer further provides a resin retention structure for retaining said surface resin material in contact with the mold surface during processing of said surface material.

22. A preform surface material adapted to provide an in-mold surface coating comprising:

a layer of a surface resin material; and

a resin retention layer comprising a resin retention structure for retaining said resin material into contact with the mold surface during processing of said surface material and whereby the resin structure is adapted to reduce the tendency for the formation of surface irregularities during processing.